

Remote Broadcasting on Campus – A Primer

by John Deveck

[BALTIMORE, Maryland - December 2004] While having a well-designed and staffed studio helps provide a truly professional image for any campus station, it is when the station “goes out to the listeners” that it really becomes an integral part of campus life.

For example, sports events seem a natural for remote broadcasting, although some of the rights may have been sold to local commercial broadcasters, and may present some difficulties. However, sports events can also be the hardest events to do right. What about the other myriad of events that are going on – right there on campus – that you can promote, highlight, participate in, and broadcast?

YOUR EVENT IS THERE, BUT YOUR STUDIO IS HERE

Of course, once you have decided to spice up your broadcasts with some sports and maybe some campus events programming, how do you do it? You could lug a recording system out there – and bring back the material for editing and later playback – or you could find a way to remotely feed your main studios with the programming.

Remote broadcasting presents some common issues, and there are a wide variety of solutions for these problems. Like anything in broadcasting, when someone asks: “how do I do it?” the first reply is always, “how much ya got?” So, as we look at the various options and explore a bit, perhaps some of these suggestions will fit your situation, or remind you of the people you need to call.

What follows is ranked (very roughly) by typical cost from the cheapest to the ones for which you go for a grant. Nevertheless, as we move along we will try to avoid an overly detailed discussion about exact costs, since some of these items can be had for a wide variety of prices.



The cheapest way to send audio from a remote site.

As an example of your options, allow me to mention two reasonable resources for used broadcast gear: www.radio-classifieds.com and www.ebay.com. There is one caveat though: you should also be friends with someone who knows which end of the soldering iron burns, just in case your used gear looks like Jake and Elwood’s car at the end of the Blues Brothers.

FIRST THINGS FIRST

There are a few basic things you should do, before you even begin to embark on a remote broadcasting quest. One is to make friends with the people who handle telecommunications on your campus. And I mean, go and meet them, buy them a coffee, ask them questions about their jobs, about how phone infrastructure is done on campus – anything and everything you can do to make sure that they like you, so when you ask for a favor, it just might happen.

If you do not know how to make friends like this on your campus, *learn now!* This is how many special “things” happen on campus, things which might not ever

find their way into the records. Make friends with the IT people the same way.

You get a zillion spare CDs for promotions, right? Do you know what kind of music the IT guys like? Or the guy that will come fix your broken door or get you the magic key for a storage closet? *Learn!* You will be amazed how much better things can go on a campus when the behind-the-scenes people like you and know that you respect them.

SIMPLE AND QUICK

Here is where those friends in telecom come into play: The easiest solution is to have direct audio connections from key campus sites, like the sports centers or the Mall, to the studio. This is usually done using a “dry pair” line from the location to the studio.

(A “dry pair” is a line running from one point to the other without passing through any transformer or patch locations. In other words, it is like running a phone line all across campus, except you do not have to deal with “ring voltage.”)

Usually, you can get a campus phone technician to provide this kind of line for you. If so, it makes it much easier to walk over to the event location, connect up your audio and go right on-the-air. On the studio end, you simply connect the line like any other input on the console and run it.

It is possible the phone techs on your campus will do this at no cost to you. While nothing is ever truly free, it is possible. Assuming you are able to accomplish this, your basic portable mixing board can be connected (line out) to the line back to the studio and away you go. You also may require amplifiers or equalizers to do this, but they are relatively cheap. See – your newfound friends have already paid off!

OTHER CONNECTION OPTIONS

The second easiest solution is a direct audio connection using coaxial, fiber optic, ethernet or another point-to-point cable from the remote site to the studio. With these options, you will need some kind of analog-to-digital converter to make the audio enter and a digital-to-analog converter to exit the cable, but that is usually not too expensive.

A heavily wired campus may have some or all of these options already in place. And, your friends (remember them?) in telecom or IT may very well have some of the gear you need sitting on a shelf.

In our case, everything audio on campus is “home run” to a central phone room, and everything video to a cable TV room. Chances are that your main sports areas will already be wired in some manner for audio and video. If not, there are wireless options, and we will get to them; for now, please be patient and let me finish this one first.

If you have a cable TV system running on campus, you can probably use sub-band, or “T” channels to insert programming that can run all over the system but not be seen (or heard) by the standard cable connection. This means that you can insert audio at the sports location on channel T-9 (for example) using a cable TV modulator, and extract it anywhere in the system using a T-9 receiver.

By the way, do not be surprised if your campus cable guys have a couple of these units just lying around. At the very least they can probably point you to cheap sources for these. As a bonus, if you need it, you can also send video this way, opening up all sorts of possibilities ranging from letting the studio engineer see what is going on at the remote to aiding staff in troubleshooting various problems that might come up. (“Use the second jack on the left side. No, the *other left side!*”)

USING THE TELEPHONE SYSTEM

The on-campus telephone system will usually offer you a variety of options, especially if there is a campus phone line near the event location. The most common approach would be to directly connect an open telephone line to the studio – similar to using a “dry pair,” but likely to have more “noise.” To do this though, you need to strip out the “ring voltage” that exists on standard lines using inexpensive phone taps. Warning: forget to do this and you may fry gear at both ends!

Another way to get audio to the studio would be to use the campus phone system as a dialup connection to the studio phones. The main disadvantage is that this requires the purchase of equipment to connect and dial. The advantage would be that you would be able to use the dialup equipment for away games as well.

Sometimes, you can get these systems connected with analog lines in your studio (or other places) – again by asking your campus telecom friends. They often need to put in analog connections for fax machines, so you can just tell them you need a fax line in your studio (but I would suggest you make sure it is analog anyway). At our campus, we have determined the campus PBX system easily can drop analog lines in most places that we need them with only a couple of days’ notice

DIGITAL PBX FUN

However, there can be some real issues with campus telephone systems. Generally, these are digital PBX systems (meaning Private Branch eXchange) that are centrally connected on campus before they go out to the “real world.” Digital systems have special methods for carrying the signals around campus and use special handsets. They are virtually all proprietary and unique; all too often your gear is not going to be directly compatible.

For that reason, you need to make sure anything you use to connect is able to deal with the digital signal. The easy solution – as usual – involves money: JK Audio [www.jkaudio.com] introduced a PBX hybrid at the last NAB show and it offers the simplest solution. They claim this unit is compatible with all digital PBX systems, barring handset-wiring issues.

Once you have hooked up this gear, you can call in from anywhere on a regular handset to make announcements. If you desire to make mixes, look at other products from JK like the ComPack. It connects into a PBX from the other side of campus and lets you do your remotes quickly.

If you cannot get analog lines, do not have access to equipment which can protect you from ring voltage or digital signals and you just *have* to make a wired system work, there is one more option. Transformers can be used to knock out voltage at both ends of the line; a quick and dirty example is using a transformer to connect your speakerphone to the console. I can direct you to a very nice site where Rane has offered a lot of information: <http://www.rane.com/note150.html>



“Can you hear me now?”

Perhaps more flexible in many ways – but more expensive – are wireless links. We will pick up with that topic next time.

John Deveck is the Operations Manager for WLOY at Loyola College in Maryland. He has friends in IT and Telecom, and is currently trying to get them to do their own radio shows. For more advice on butt-kissing around campus, email John at: wloy@loyola.edu